

Claims

- [c1] 1.A method of cleaning a surface of a partially manufactured integrated circuit subsequent to implantation of dopant ions into the surface, wherein the surface contains dopant ions, the method comprising: coating the surface containing dopant ions with a non-aqueous organic solvent selected from the group consisting of ketones, polyhydric alcohols, cyclic ethers and esters; and removing the solvent and the dopant ions from the surface.
- [c2] 2.The method according to Claim 1, wherein the surface is a collar region in a deep trench.
- [c3] 3.The method according to Claim 1, further comprising rinsing the partially manufactured integrated circuit with deionized water.
- [c4] 4.The method according to Claim 1, wherein the solvent is selected from the group consisting of acetone, methyl ethyl ketone, cyclohexanone, methyl isoamyl ketone and 2-heptanone,

ethyleneglycol, ethyleneglycol monoacetate, diethyleneglycol, diethyleneglycol monoacetate, propyleneglycol, propyleneglycol monoacetate, dipropyleneglycol and dipropyleneglycol monoacetate as well as monomethyl, monoethyl, monopropyl, monobutyl and monophenyl ethers thereof, dioxane, methyl lactate, ethyl lactate, methyl acetate, ethyl acetate, butyl acetate, methyl pyruvate, ethyl pyruvate, methyl methoxypropionate, ethyl ethoxypropionate and mixtures thereof.

[c5] 5.The method according to Claim 1, wherein coating the surface occurs prior to formation of a barrier layer on the surface.

[c6] 6.The method according to Claim 1, wherein the dopant ions are selected from the group consisting of arsenic, gallium, indium, phosphorous, boron, antimony and bismuth ions.

[c7] 7.The method according to Claim 1, further comprising heating the surface and removing an increased amount of dopant ions.

[c8] 8.The method according to Claim 1, wherein the non-aqueous organic solvent further comprises a soluble polymer and a soluble photosensitive compound.

